

ATTACHMENT 6



WETLAND & VERNAL POOL ANALYSIS

May 20, 2014

**Site Acquisitions, Inc.
500 Enterprise Drive
Rocky Hill, CT 06067**

APT Project No.: CT1931081

**Re: Proposed AT&T Facility
30 Cobblers Hill Court
Monroe, Connecticut**

All-Points Technology Corporation, P.C. ("APT") understands that a wireless telecommunications facility ("Facility") is proposed by New Cingular Wireless PCS, LLC ("AT&T") at 30 Cobblers Hill Court in Monroe, Connecticut ("subject property"). As proposed, the Facility would consist of a 155-foot tall monopole, antenna arrays and ground-mounted equipment shelter located within a 75' by 75' fenced compound, as well as an approximately 1,634-foot long by 20-foot wide access/utility easement. At your request, APT has completed an assessment of impacts to wetlands and vernal pool habitat located on and proximate to the subject property which may be affected by proposed construction of the Facility. This evaluation is based on APT's review of site plans prepared by ProtTerra Design Group, LLC (titled Site Name: Monroe CT, Site Number: S1200, Address: 30 Cobblers Hill Court, Monroe, CT, latest revision date 07/23/13) and our wetland delineation (as detailed in APT's Wetland Investigation report, dated July 25, 2013, provided previously under separate cover). The findings of this assessment are presented below.

Introduction

APT wetland scientists conducted an inspection of the subject property on July 3, 2013 to determine the presence or absence of wetlands and watercourses within approximately 200 feet of proposed development activities ("Study Area"). A more recent inspection was performed on May 3, 2014 to assess vernal pool habitat. At least one more inspection is scheduled in late May/early June to collect additional vernal pool information; a supplement to this report will be provided upon the completion of the final field inspection. A summary of our findings to date are provided below.

The Subject Property consists of approximately 36 acres of undeveloped forest identified as 30 Cobblers Hill Court in Monroe, Connecticut. The area proposed for the wireless communications facility is located adjacent to the southeastern property boundary in the southern portion of the Subject Property in an area that is currently comprised of mature upland hardwood forest. Access to the Facility is proposed to come off Cobblers Hill Court and travel southerly near the west property boundary through wooded uplands. The Study Area is dominated by mature upland hardwood forest with complexes of forested hillside seep wetland systems intermingled with the bedrock controlled upland glacial till habitat; areas of exposed bedrock were observed in several locations. The surrounding land-use consists of residential development, a quarry and undeveloped forested areas.

ALL-POINTS TECHNOLOGY CORPORATION, P.C.

3 SADDLEBROOK DRIVE · KILLINGWORTH, CT 06419 · PHONE 860-663-1697 · FAX 860-663-0935

P.O. BOX 504 · 116 GRANDVIEW ROAD · CONWAY, NH 03818 · PHONE 603-496-5853 · FAX 603-447-2124

Wetland and Vernal Pool Descriptions

Two wetland areas were delineated within the Study Area consisting of hillside seep forested wetland systems associated with intermittent watercourses that generally flow to the south.

Wetland 1 is a hillside seep wetland system formed in dense glacial till. Wetland 1 generally surrounds the proposed Facility nearby to the east, south and west. Intermittent watercourses are associated with this wetland system with a main channel located in the west portion of the wetland that receives flows from an intermittent watercourse located in the east portion. The eastern intermittent watercourse receives surface flows from Wetland 2 via an 8-inch PVC pipe, which then flows to the west in the southern portion of this wetland. Wetland 1 seasonally ponds water in select locations that could result in support of vernal pool habitat, either as staging habitat on the migration route to more suitable breeding habitat or potentially as cryptic style vernal pool habitat contained in areas of the wetland system further downstream beyond the limits of the delineation. At wetland flag WF 1-21 an old test pit located along the wetland boundary was observed filled with water and supporting several adult green frogs, wood frog tadpoles, and spotted salamander larvae, considered facultative (green frog) and obligate vernal pool species (wood frog and spotted salamander). In addition, two adult wood frogs were observed in the surrounding uplands near the proposed Facility, providing indirect evidence that vernal pool habitat is supported by nearby wetlands.

Although not part of Wetland 1, an isolated wetland was observed near the west property boundary in the northern end of the subject property and identified as having classic style vernal pool physical characteristics. Since this area is located off the subject property it was not included in this delineation, although its approximate location was identified due to its proximity to the subject property and proposed development activities. This pool was found to contain hundreds of wood frog tadpoles and 8 to 10 spotted salamander egg masses.

Wetland 2 is a forested hillside seep wetland system that has been ditched at its southern limit. A seasonal intermittent watercourse forms within the interior of the wetland, with surface flows channelized into a man-made ditch at the south end of the wetland, conveying flows into an 8-inch PVC pipe. This pipe outfalls into the northern end of Wetland 1 at wetland flag WF 1-50.

Wetland and Vernal Pool Impact Analysis

No direct impact to wetlands will result from the proposed AT&T development. APT understands that one of the key considerations that resulted in selection of the proposed tower facility location was to provide maximum buffers to nearby residences and residential property to the north, south and west; the subject property owner owns the adjoining parcel to the east. As a result of this selection process, the proposed compound and the southern portion of the proposed access drive are located in proximity to Wetland 1. The nearest wetland to the proposed fenced compound is located approximately 43 feet to the northeast at wetland flag 1-40; grading would be located ± 38 feet away. The inundated test pit near wetland flag 1-21 (that provides some vernal pool breeding), is located ± 110 south of the proposed compound fence. The closest activity to wetlands is associated with a level spreader treating stormwater from a relatively short drainage swale: ± 16 feet from the east end of the level spreader to wetland flag 1-43 (grading associated with this feature is ± 11 feet from this wetland location).

Short-term impacts associated with the proposed development within these upland areas proximate to wetlands (known as "upland review area") would be minimized by the proper installation and maintenance of erosion and sedimentation controls in accordance with *2002 Connecticut Guidelines For Soil Erosion and Sediment Control*. Long-term temporary upland review area impacts are minimized by the unoccupied nature of the Facility and limited traffic generated by routine maintenance visits (approximately once per month for AT&T). Impervious surfaces associated with the proposed Facility have been minimized with the use of a gravel surface within the Facility compound that promotes infiltration. Proposed stormwater management features, including stone-lined

drainage swales and level spreaders, will not alter existing surface water drainage patterns and will control stormwater runoff and maintain hydrology of nearby wetland areas. In addition, the proposed development will not create decoy pools that could adversely affect breeding amphibians.

Physical Impact to Vernal Pool and Surrounding Terrestrial Habitat

This section details a recognized scientific method for analyzing the potential impact a project may have on a particular vernal pool and its surrounding upland habitat.

Construction and operation of the Facility would not result in direct physical impact to the off-site vernal pool. Although the inundated test pit near wetland flag 1-21 was found to support some vernal pool breeding habitat, due to its man-made nature and very small size it is not considered to provide significant vernal pool habitat and therefore was not included in this analysis. It is widely documented that vernal pool dependent amphibians are not only solely dependent upon the actual vernal pool habitat for breeding and egg and juvenile development but require surrounding upland habitat for most of their adult lives. Recent studies recommend protection of adjacent habitat up to 750 feet from the vernal pool edge for obligate pool-breeding amphibians.¹

In order to evaluate potential impacts to this vernal pool and its surrounding upland habitat, the resource was assessed using methodology developed by Calhoun and Klemens (2002). This methodology assesses vernal pool ecological significance based on two parameters: 1) biological value of the vernal pool, and 2) conditions of the critical terrestrial habitat. The biological rating is based on the presence of federal or state-listed species and abundance and diversity of vernal pool indicator species. (Note: based on the observations collected to date of the vernal pool, the highest biological value is assumed to be supported.) The terrestrial habitat is assessed based on the integrity of the vernal pool envelope (within 100 feet of the pool's edge) and the critical terrestrial habitat (within 100-750 feet of the pool's edge). A priority rating of Tier I was assigned to the off-site vernal pool, with Tier I considered to have relatively high breeding activity and relatively intact terrestrial habitat² (Tier II and III pools represent lower amphibian productivity and fragmented terrestrial habitat). Pools with 25% or less developed areas in the critical terrestrial habitat are identified as having high priority for maintaining less than 25% development within this terrestrial habitat, including site clearing, grading and construction¹.

The vernal pool evaluated in this assessment was rated based on these criteria for both the existing condition and the proposed condition (e.g., AT&T's proposed development) to determine if the proposed Facility disturbances would result in a reduction in the tier rating system or reduce the terrestrial habitat integrity below the critical 75% non-development criterion. As previously discussed, it was conservatively assumed that the vernal pool currently has the highest conservation priority rating of Tier I. The results of this analysis show that the proposed development will not result in further degradation of the existing tier rating or terrestrial habitat integrity of the vernal pool due to the small amount of disturbance associated with the development of the proposed Facility. The vernal pool envelope will not be impacted as the proposed Facility development (proposed 12-foot wide gravel access drive) is located approximately 350 feet east of the closest vernal pool edge (the proposed tower compound is located more than 900 feet away). The total area of the critical terrestrial habitat associated with the vernal pool, which includes land located off the subject property, is 44.28± acres with 14.05± acres consisting of existing development (primarily associated with residential development along Cobblers Hill Court and Mustang Drive). Please refer to the enclosed Vernal Pool Analysis Map. This equates to approximately 31.7% of the critical terrestrial habitat as being already developed. The proposed Facility compound is located outside of the critical terrestrial

¹ Calhoun, A.J.K. and M.W. Klemens. 2002. Best Development Practices (BDPs): Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States. WCS/MCA Technical Paper No. 5.

² Vernal Pool Assessment Sheet (source: Calhoun and Klemens 2002)

habitat. However, a significant portion of the proposed gravel access road is located within the critical terrestrial habitat, resulting in development of 0.36± acre, which represents an increase of only 0.8% of the total critical terrestrial habitat of the vernal pool. Therefore, the proposed AT&T development represents a de minimis increase in development of the vernal pool's critical terrestrial habitat and does not result in the tipping point of reduction below the 75% non-development criterion since it has already been exceeded³. Therefore, the proposed development will not result in a likely adverse impact to existing amphibian productivity and will not result in long-term adverse impact to the terrestrial habitat considering the relatively small area of development associated with the 12-foot wide gravel access drive and limited traffic it will generate.

The potential exists for possible short-term impact to herpetofauna associated with the nearby vernal pool habitat due to possible encounters with migrating and basking individuals that may intercept the proposed development footprint during construction. Best Management Practices ("BMPs"; Calhoun and Klemens, 2002) are proposed during construction in a subsequent section of this document to avoid/minimize the potential for short-term impact to herpetofauna.

Hydraulic Alterations

Land-use changes (i.e., clearing, increases in impervious surface) can increase surface runoff in the watershed of a vernal pool. Direct inputs of stormwater flows into a pool may produce sudden water level increases in a short period of time and may lengthen the duration of flooding (hydroperiod). Diversion of stormwater flows past a pool may have the opposite effect of decreasing water levels and shortening the pool's hydroperiod. In addition, stormwater features that create temporary pools of water can result in a biological "sink" as breeding amphibians deposit eggs into a water body without the necessary hydraulic period to allow for successful development of the eggs into juveniles.

Site clearing and grading activities will not de-water the nearby vernal pool or alter surface water drainage patterns associated with the pool. Impervious surfaces associated with the proposed AT&T project have been minimized with the use of a gravel surface within the wireless telecommunications Facility compound. The proposed development will not alter existing surface or subsurface flow conditions or directions. Therefore, the proposed development will not alter the hydrology of the nearby vernal pool. In addition, no stormwater management features are proposed that would result in creation of a temporary pool and "sink", including two grass lined swales and a rip-rap level spreader, which could potentially affect breeding amphibians intercepted on their migration to the nearby vernal pool.

Wetland and Vernal Pool Recommended Best Management Practices

As a result of the proposed development's location in close proximity to wetlands and in the vicinity of vernal pool habitat, the following BMPs are recommended to protect wetland resources from temporary impacts and avoid unintentional impact or mortality to vernal pool herpetofauna (i.e., spotted salamander, wood frog, turtles, etc.) during construction activities. Based on APT's previous work on this project with respect to the occurrence of Eastern Box Turtle, a state-listed Special Concern Species, an isolation barrier (i.e., silt fence) will surround the entire project area. The complete details of the recommended BMPs will be included in the Development and Management Plan should the site be approved by the Connecticut Siting Council.

APT recommends the proposed construction activities be seasonally restricted from occurring during peak amphibian movement periods (early spring breeding [March 1st to May 15th] and late summer dispersal [July 15th to

³This threshold is generally used for prioritizing vernal pool conservation efforts: Calhoun, A.J.K. and M.W. Klemens. 2002. Best Development Practices (BDPs): Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States. WCS/MCA Technical Paper No. 5. Pg. 10.

September 15th)). This recommendation is made in concert with the need to protect a state-listed species, Eastern Box Turtle, which requires installation of an isolation barrier around the entire project site. Such a barrier would potentially disrupt herpetofauna migration patterns considering a significant portion of the proposed access drive is located within the 750 foot critical terrestrial habitat to a nearby vernal pool. Syncopated silt fencing (which allows for periodic openings for herpetofauna migration without compromising erosion control) would typically be recommended to allow for construction to continue during peak amphibian movement periods (with the addition of other protective measures such as daily sweeps for herpetofauna). However, with the overriding need to protect Eastern Box Turtle, seasonal restriction for construction is the most prudent means of protecting all of the species of concern. Details of the proposed protection plan are provided below.

Wetland and Vernal Pool Protection Plan

A qualified professional from APT would serve as the Environmental Monitor for this project to ensure that wetland and vernal pool protection measures are implemented properly. The proposed wetland and vernal pool protection program consists of several components including: seasonal restriction, isolation of the project perimeter; periodic inspection and maintenance of isolation structures; herpetofauna sweeps; education of all contractors and sub-contractors prior to initiation of work on the site; protective measures; and, reporting.

1. Seasonal Restriction

- a. Construction of the wireless telecommunications facility should be restricted from occurring during the peak vernal pool migration and breeding period (March 1 to May 15th) and late summer dispersal period (July 15th to September 15th). Should construction be initiated prior to but not completed before the start of these restrictive periods, 1-foot to 2-foot gaps in erosion controls should be placed every 50 feet and a second row of erosion control should be placed 1 to 2 feet behind the first row and staggered (“syncopated silt fencing”) so that wildlife can navigate through the barrier but not compromise the integrity of the erosion control measure.

2. Isolation Measures & Erosion and Sedimentation Controls

- a. Plastic netting used in a variety of erosion control products (i.e., erosion control blankets, fiber rolls [wattles], reinforced silt fence) has been found to entangle wildlife, including reptiles, amphibians, birds and small mammals. No permanent erosion control products or reinforced silt fence will be used on the AT&T project. Temporary erosion control products that will be exposed at the ground surface and represent a potential for wildlife entanglement will use either erosion control blankets and fiber rolls composed of processed fibers mechanically bound together to form a continuous matrix (netless) or netting composed of planar woven natural biodegradable fiber to avoid/minimize wildlife entanglement.
- b. The extent of the erosion control silt fencing for the protection of Eastern Box Turtle will result in creation of a barrier that will isolate proposed construction areas from surrounding wetland and vernal pool habitat (both on downgradient as well as upgradient sides of the development). Field conditions may require the installation of additional barrier fencing at the direction of the Environmental Monitor. The Contractor shall maintain additional supplies of barrier fencing and erosion controls on site for this purpose.
- c. Installation of conventional silt fencing, which will also serve as an isolation of the work zone from surrounding areas and is required for erosion control compliance, shall be performed by the Contractor following clearing activities and prior to any earthwork. The Environmental Monitor will inspect the work zone area prior to and

following erosion control barrier installation to ensure the area is free of herpetofauna.

- d. The fencing will consist of conventional erosion control woven fabric, installed approximately six inches below surface grade to bury the bottom of the silt fence and staked at seven to ten-foot intervals using four-foot oak stakes or approved equivalent. In addition to required daily inspection by the Contractor, the fencing will be inspected for tears or breeches in the fabric following installation and either on a weekly or biweekly inspection frequency by the Environmental Monitor throughout the duration of the construction project. If inspections are performed on a biweekly basis, such inspections will also include inspections following storm events of 0.25 inch or greater.
- e. No equipment, vehicles or construction materials shall be stored outside of barrier fencing.
- f. All silt fencing shall be removed within 30 days of completion of work and permanent stabilization of site soils so that reptile and amphibian movement between uplands and wetlands is not restricted.

3. Contractor Education:

- a. Prior to work on site, the Contractor shall attend an educational session at the pre-construction meeting with APT. This orientation and educational session will consist of an introductory meeting with APT providing photos of herpetofauna and emphasizing the non-aggressive nature of these species, the absence of need to destroy animals that might be encountered and the need to follow Protective Measures as described in Section 5 below.
- b. The Contractor will be provided with cell phone and email contacts for APT personnel to immediately report any encounters with herpetofauna. Educational poster materials will be provided by APT and displayed on the job site to maintain worker awareness as the project progresses.

4. Petroleum Materials Storage and Spill Prevention

- a. Certain precautions are necessary to store petroleum materials, refuel and contain and properly clean up any inadvertent fuel or petroleum (i.e., oil, hydraulic fluid, etc.) spill due to the project's location in proximity to sensitive wetlands.
- b. A spill containment kit consisting of a sufficient supply of absorbent pads and absorbent material will be maintained by the Contractor at the construction site throughout the duration of the project. In addition, a waste drum will be kept on site to contain any used absorbent pads/material for proper and timely disposal off site in accordance with applicable local, state and federal laws.
- c. The following petroleum and hazardous materials storage and refueling restrictions and spill response procedures will be adhered to by the Contractor.
 - i. Petroleum and Hazardous Materials Storage and Refueling
 1. Refueling of vehicles or machinery shall occur a minimum of 100 feet from wetlands or watercourses and shall take place on an impervious pad with secondary containment designed to contain fuels.
 2. Any fuel or hazardous materials that must be kept on site shall be stored on an impervious surface utilizing secondary containment a minimum of 100 feet from wetlands or watercourses.

ii. Initial Spill Response Procedures

1. Stop operations and shut off equipment.
2. Remove any sources of spark or flame.
3. Contain the source of the spill.
4. Determine the approximate volume of the spill.
5. Identify the location of natural flow paths to prevent the release of the spill to sensitive nearby waterways or wetlands.
6. Ensure that fellow workers are notified of the spill.

iii. Spill Clean Up & Containment

1. Obtain spill response materials from the on-site spill response kit. Place absorbent materials directly on the release area.
2. Limit the spread of the spill by placing absorbent materials around the perimeter of the spill.
3. Isolate and eliminate the spill source.
4. Contact the appropriate local, state and/or federal agencies, as necessary.
5. Contact a disposal company to properly dispose of contaminated materials.

iv. Reporting

1. Complete an incident report.
2. Submit a completed incident report to the Connecticut Siting Council.

5. Protective Measures

- a. A thorough cover search of the construction area will be performed by the Environmental Monitor for herpetofauna prior to and following installation of the silt fencing barrier to remove any species from the work zone prior to the initiation of construction activities.
- b. Any stormwater management features, ruts or artificial depressions that could hold water created intentionally or unintentionally by site clearing/construction activities will be properly filled in and permanently stabilized with vegetation to avoid the creation of vernal pool "decoy pools" that could intercept amphibians moving toward the vernal pools. Stormwater management features such as level spreaders will be carefully reviewed in the field to ensure that standing water does not endure for more than a 24 hour period to avoid creation of decoy pools and may be subject to field design changes. Any such proposed design changes will be reviewed by the design engineer to ensure stormwater management functions are maintained.
- c. Erosion control measures will be removed no later than 30 days following final site stabilization so as not to impede migration of herpetofauna or other wildlife.

6. Herbicide and Pesticide Restrictions

- a. The use of herbicides and pesticides at the proposed wireless telecommunications Facility and along the proposed access drive are strictly prohibited.

7. Reporting

- a. Biweekly inspection reports (brief narrative and applicable photos) will be submitted to the Connecticut Siting Council for compliance verification. Any observations of herpetofauna will be included in the reports.

If you have any questions regarding the above-referenced information, please feel free to contact me by telephone at (860) 663-1697 ext. 201 or via email at dgustafson@allpointstech.com.

Sincerely,

All-Points Technology Corporation, P.C.

A handwritten signature in blue ink that reads "Dean Gustafson". The signature is written in a cursive style with a horizontal line extending from the end of the name.

Dean Gustafson
Senior Wetland Scientist

Enclosure

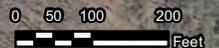
Vernal Pool Analysis Map

Vernal Pool Analysis Map



Source: 2010 Color Bing Maps
Aerial Images with 1-ft Resolution

1 inch equals 250 feet



Legend

-  Proposed Tower Location
-  Proposed Access Route
-  Vernal Pool Boundary
-  100' Vernal Pool Envelope
-  APT Delineated Wetland Boundary
-  Approximate Wetland Area
-  CT Parcel
-  750' Critical Terrestrial Habitat
-  Undeveloped
-  Developed

Proposed AT&T Telecommunications Tower

30 Cobblers Hill Court
Monroe, Connecticut

Monday, May 19, 2014

